Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
100-8th Avenue SE
St. Petersburg, FL 33701

Collection of Water Column Samples for Microscopic Analysis of Microalgae

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NOTE: This version supersedes all previous versions

1. Collect the water samples with a clean sampling device (e.g., weighted bottle, Niskin bottle or a bucket) that has been rinsed with seawater from the sample location to remove residue.

2. For shallow surface sample, water should be taken at approximately 0.5 meters below the surface. Shallow samples can be collected with any kind of bottle or bucket.

3. Deep samples can be collected in a Niskin bottle, or weighted bottle on a rope, "trapping" the water at the chosen depths (discrete depths). The weighted bottle is good to approximately 12 meters. The Niskin bottle (or other similar bottles) can go much deeper.

4. The bottle used for the sample should total 125-1,000 mL, depending on purpose of sampling - live or preserved. At times, it is helpful to use an intermediate container from the sampling device to the sample bottle (a funnel or a half-gallon milk jug with the top cut off works well); if that is the case, follow rinse procedure as described in step 5 for the intermediate container as well.

5. Be sure to label all sample bottles with collection date and time, specific location (latitude/longitude or some traceable landmark), depth, sampler's name, and sampler's agency. Information should be written on the side of the sample bottle, not on the lid. Have all the sample information transcribed to a field data sheet, preferably using a FWRI template. If possible, record water temperature, salinity, dissolved oxygen, and any noteworthy information observed at the time of sampling on the field data sheet. Use permanent marker for writing on bottle to prevent smudging.

6. **For LIVE samples**: Preferably, use larger bottle sizes (500-1,00mL). Carefully pour some of the water from the sampling device into the sample bottle and then rinse. Dump out the rinse water. Completely fill the sample bottle to avoid excessive turbulence and bubble creation, which can break up certain cells during transport. Put on the lid.

7. Immediately wrap sample bottle in wet towels or newspaper, place in a cooler and keep cooler protected from direct sun as much as possible. **Samples should NOT be iced** because unarmored dinoflagellates and flagellates can lyse when samples are iced. The evaporation of water from the wet paper towels or newspaper keeps the sample from heating up. Transport samples to the lab for analysis within 24 hours or ship them in a Styrofoam mailer by **overnight courier**.

8. Repeat this procedure at all sampling sites.

9. **For LUGOL'S preserved samples**: There are two options, both using 125-150 mL amber bottles that may or may not have Lugol's already added to the bottle. (a) If starting with an empty bottle, rinse it as described in step 6, fill it with sampled water to the shoulder, add about 2 mL of the Lugol's solution (2 squirts of a plastic Pasteur pipet), cap securely, and gently invert the bottle several times. (b) If starting with a bottle already prepared with Lugol's solution, carefully fill it with sampled water to the shoulder, cap securely, and gently invert the bottle several times. Place bottles into sealable bags to prevent iodine from escaping, due to its gaseous nature, before packing them for transport. Keep sample bottles protected from direct sun as much as possible.

LUGOL'S SOLUTION

See FWC/FWRI appropriate SOP for reagents needed and method of preparation. Be sure not to store Lugol's solution/bottles in your vehicle for any extended period of time beyond the sampling day.